Comments of the Society of Broadcast Engineers, Inc., Capital Cities/ABC, Inc., Association of Maximum Service Television, Inc., and National Broadcasting Company, Inc.

General Docket 90-357
IB Docket 95-91
Digital Audio Radio Satellite Service

SBE

September 14, 1995

SOCIETY OF BROADCAST ENGINEERS, INC.
Indianapolis, Indiana

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

In the Matter of	)	
	)	
Establishment of Rules and Policies	)	IB Docket No. 95-91
for the Digital Audio Radio	)	General Docket 90-357
Satellite Service in the 2310-2360	)	
MHz Frequency Band	)	

To: The Commission

COMMENTS OF THE SOCIETY OF BROADCAST ENGINEERS, INC. AND CAPITAL CITIES/ABC, INC., ASSOCIATION OF MAXIMUM SERVICE TELEVISION, INC. AND NATIONAL BROADCASTING COMPANY, INC.

The Society of Broadcast Engineers, Incorporated, the national association of broadcast engineers and technical communications professionals, with more than 5,000 members in the United States, in concert with Capital Cities/ABC, Inc., the Association of Maximum Service Television, Inc., and the National Broadcasting Company, Inc. (hereafter, "SBE and the Joint Commentators") hereby respectfully submits its comments in the above-captioned Notice of Proposed Rule Making relating to the Digital Audio Radio Satellite Service (DARS).

I. Need for Mandatory Frequency Coordination Between DARS Feeder Uplink Stations and Television Broadcast Auxiliary Stations

1. Beginning at Paragraph 70 of the Notice of Proposed Rule Making ("NPRM"), the issue of earth-to-space DARS feeder uplinks in the 6,875-7,125 MHz Television Broadcast Auxiliary band is discussed. Because broadcasters rely heavily on the 7 GHz Television Broadcast Auxiliary band for studio-to-transmitter links (STL), intercity relays (ICR), and, to a lesser extent, for mobile and portable TV

Pickup stations, any sharing of the ten channels in this band is of concern to the SBE and the Joint Commentators.

2. SBE first learned of proposals to share these frequencies in filings by Satellite CD Radio ("Satellite CD Radio"), Digital Satellite Broadcasting Corporation ("DSBC"), Loral Aerospace Holdings, Inc. ("Loral"), Primosphere Limited Partnership ("Primosphere"), and Sky-Highway Radio Corporation ("Sky-Highway"), in 1992 and 1993. Satellite CD Radio proposed using 7,035-7,055 MHz for feeder uplinks, thus overlaying portions of TV Broadcast Auxiliary channels B7 (7,025-7,050 MHz) and B8 (7,050-7,075). DSBC proposed using 6,725-7,025 MHz for feeder uplinks, thus overlaying TV Broadcast Auxiliary Channels B1 (6,875-6,900 MHz) through B6 (7,000-7,025 MHz). Sky-Highway proposed using 6,805-7,255 MHz for feeder uplinks, thus overlaying TV Broadcast Auxiliary Channels B1 through B10 (*i.e.*, the entire 6,875-7,125 MHz Television Broadcast Auxiliary band) for its uplink operations. Primosphere proposed using 7,025-7,075 MHz for feeder uplinks, thus overlaying Television Broadcast Auxiliary Channels B7 and B8. Loral proposed using 7,046-7,052 MHz for feeder uplinks, thus overlaying Television Broadcast Auxiliary Channels B7 and B8.

3. Because the above DARS applications either did not address frequency coordination with Television Broadcast Auxiliary stations at all, or, addressed frequency coordination with broadcasters in only in a rudimentary, almost cavalier manner, SBE filed informal objections to the Loral, Primosphere, and Sky-Highway applications

on April 9, 1993, in addition to its December 1, 1992 , informal objection to the Satellite CD Radio application.

4. SBE and the Joint Commentators are gratified to see that these informal objections had their desired effect: namely, that the Commission, in the NPRM, recognizes the necessity for frequency coordination and technical standards between stations sharing the 7 GHz Television Broadcast Auxiliary band.

II. Frequency Coordination Criteria

5. SBE and the Joint Commentators agree that, under certain conditions, DARS feeder uplinks could share 7 GHz Television Broadcast Auxiliary frequencies with broadcasters, with no harmful interference to broadcasters. SBE and the Joint Commentators therefore propose that the following constraints be placed on DARS feeder uplink stations:

6. Protection of Nearby Television Broadcast Auxiliary Fixed Receive Sites. No DARS feeder uplink station should be permitted to be located within 80 kilometers of an existing 7 GHz Television Broadcast Auxiliary receive site, nor should it be located at a site with radio line of sight to an existing co-channel or adjacent-channel Television Broadcast Auxiliary receiving location, unless it would provide a co-channel desired-to-undesired ("D/U") interference ratio of 60 dB or better, or an adjacent-channel D/U ratio of 0 dB or better. A DARS feeder uplink station should be considered as "co-channel" to all Television Broadcast Auxiliary channels where there is frequency overlap, no matter how small. A DARS feeder uplink station should be considered as "adjacent-

channel" to all Television Broadcast Auxiliary channels within 25 MHz. When calculating the required protection ratio, the desired Television Broadcast Auxiliary signal should be assumed to fade at a rate of 0.8 dB per kilometer, whereas the undesired DARS feeder uplink signal should never be assumed to fade. Alternatively, it should be acceptable to show that the undesired DARS feeder uplink signal would be less than -96 dBm at the receiver input terminal, or is 10 dB or more below the manufacturer's published receiver threshold for the receiver in use by the Television Broadcast Auxiliary station being protected, whichever is the lesser number.

7. Protection of Sporting Facility Sites. No DARS feeder uplink station should be permitted to be located within 30 kilometers of a major racetrack, or within 16 kilometers of a major stadium, golf course, or other venue where national tournaments are regularly played. These additional siting restrictions will ensure that TV Broadcast Auxiliary spectrum used by portable or mobile receivers do not receive interference. It is important that no DARS feeder uplink stations be sited near a major sports venue, so as not to preclude use of 7 GHz TV Broadcast Auxiliary spectrum for use by TV Pickup stations. Because the primary interference concern involves mobile and portable TV Broadcast Auxiliary receivers, it is not practical to allow an alternative showing based on calculated D/U ratios. For sporting facility sites, only an absolute separation requirement will suffice. A greater preclusion distance for major racetracks is needed because of the larger geographic extent that a major racetrack can represent.

8. DARS Acceptance of Interference from Television Broadcast Auxiliary Stations. DARS feeder uplink stations should be required to accept any interference received from existing Television Broadcast Auxiliary stations, including portable and mobile TV Pickup stations.

III. Summary

9. SBE and the Joint Commentators believe that the restrictions proposed in these comments, if codified into Part 25 of the FCC Rules, would ensure that newcomer DARS feeder uplink stations proposing to operate on 7 GHz Television Broadcast Auxiliary frequencies would not cause interference to existing fixed link stations and to mobile (TV Pickup) operations in the vicinity of major racetracks, and other sports venues. DARS feeder uplink stations electing to use these frequencies should also be required to accept any interference that may be received from terrestrial Television Broadcast Auxiliary stations, including TV Pickup stations that may, from time to time, be aimed at high elevation angles in order to establish links to airborne platforms.

Respectfully submitted,

SOCIETY OF BROADCAST ENGINEERS, INC.

By Charles W. Kelly Jr
Charles W. Kelly, Jr.
President

By Dane E Ericksen
Dane E. Ericksen, P.E., CSRE,
CSTE Chairman, SBE FCC Liaison Committee

ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC.

By Victor Tawil
Victor Tawil, Vice President
and Chief Engineer
1776 Massachusetts Ave. NW
Washington, DC 20036

By _____
Christopher D. Imlay
Its Counsel

CAPITAL CITIES/ABC, INC.

By _____
Sam Antar, Vice President
Law & Regulation
77 West 66th Street, 16th Floor
New York, New York 10023

NATIONAL BROADCASTING COMPANY, INC.

By _____
Louis Libin
Director of Technology
30 Rockefeller Plaza
New York, NY 10112

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BOOTH FRERET & IMLAY, P.C.
1233 20th Street, N. W., Suite 204
Washington, D. C. 20036
(202) 296-9100